MATERNITY UNIT

GUIDELINE:

PREPARATION AND CARE OF WOMEN UNDERGOING CAESAREAN SECTION,
INCLUDING TRIAL OF INSTRUMENTAL DELIVERY IN THEATRE

SCOPE:
All midwives, nurses, obstetricians and paediatricians working in the maternity and neonatal unit

AUTHOR:
Midwifery Educator

PURPOSE:
To clarify the process of preparing a woman for emergency or elective caesarean section in order to optimise the safety and effectiveness of the procedure.

DEFINITIONS:

Caesarean section (c/s): Surgical incision into the abdominal and uterine wall to achieve delivery of the baby. It is done when continuation of the pregnancy and/or vaginal delivery would be hazardous to the mother or fetus. Caesarean sections are categorised as either primary (i.e. first c/s delivery) or repeat (i.e. after previous c/s birth).

Mendelsons syndrome: An inflammatory response to inhalation of regurgitated gastric juices during the induction of general anaesthesia. The juices burn the lining of the lungs causing irritation, spasm and oedema and can be fatal.

Instrumental delivery: The use of an instrument or tool to aid birth, e.g. ventouse, forceps.

GUIDELINE:

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Aspiration prevention prophylaxis for c/s and/or obstetric surgery:
Every pregnant and postpartum woman requiring surgery should be well prepared prior to transfer to theatre to minimise the risks involved. These women are at risk of Mendlesons syndrome therefore it is appropriate that a premedication is administered.

Ranitidine (Zantac and Metoclopramide (Maxalon) IV and oral preparations are currently used for emergency and elective caesarean section. If IV Ranitidine is not available (which has happened on one occasion), TDH has agreed to administer Omeprazole IV instead until ranitidine can be made available. The prescription will be a standing order and needs to be signed by an obstetrician or anaesthetist within 24 hours of administration. The core midwife is responsible for ensuring that these medications are appropriately administered.

Pre-medication regime:

<table>
<thead>
<tr>
<th>ELECTIVE:</th>
<th>EMERGENCY:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evening before (for either morning OR afternoon surgery):</td>
<td>As soon as possible pre-op :</td>
</tr>
<tr>
<td>• Ranitidine 150mg orally</td>
<td>• Ranitidine 50mg IV diluted with 20mls compatible IV fluid (0.9% Sodium Chloride), administered over a minimum of 2 minutes (If there is no Ranitidine or an allergy to ranitidine administer Omeprazole 40mg IV (dilute with the diluent supplied) and administer as a slow push over at least 2.5 minutes instead of ranitidine.</td>
</tr>
<tr>
<td>2 hours pre-op:</td>
<td>• Metoclopramide 10mg IV – give undiluted over 1 – 2 minutes (see notes on injectable drugs)</td>
</tr>
<tr>
<td>• Ranitidine 150mg orally</td>
<td>As soon as possible pre-op: Sodium Citrate (Ural) diluted with water to 30mls orally – give as leaving DU to go to theatre. In the case of a category 1 c/s and not enough time to give other pre-meds, give the Sodium Citrate/Ural</td>
</tr>
<tr>
<td>• Metoclopramide 10mg orally</td>
<td>Antimicrobial prophylaxis will be given by the Anaesthetists on arrival in theatre to meet the recommended time frame.</td>
</tr>
</tbody>
</table>

Antimicrobial prophylaxis will be given by the Anaesthetists on arrival in theatre to meet the recommended time frame.
A review of the evidence highlights that the most important goal in trying to reduce the rates of postoperative site infections in women undergoing a caesarean section is to ensure that they receive antimicrobial prophylaxis, these will be given in Theatre by the Anaesthetists as best practice recommends the administration of IV antibiotics within 1 hour of the time of skin incision but ideally within 30 minutes. This is to establish a bactericidal serum level at incision time and maintain therapeutic levels throughout the operation.

Make sure that all pre-medications have been signed for on the patient’s medication chart once administered and entered into her maternity clinical information system (MCIS) records.

This regime is for either spinal or General Anaesthetic (GA). The woman should be instructed to have nothing to eat or drink for at least 6 hours prior to the operation for an elective c/s, apart from water which may be drunk up to 2 hours prior to the operation.

Women in labour who have a high risk of proceeding to c/s are advised to have clear fluids only during labour, and to have the anaesthetic consent form completed prior to or during labour.

**Essential paperwork:**
In each delivery room and at maternity reception, there is a ‘Theatre Pack’ with all forms needed to prepare the woman for theatre. These include (*all forms are to be labeled with patients ID labels*):

- Pre-operation consent form (anaesthetics) – complete adult consent
- Consent to Treatment - Surgery /Other procedure
- Pre-operative checklist
- Anaesthesia Record
- Operation record
- Fluid Balance 24 hour chart
- Infection control caesarean section audit form
- Waterlow pressure sore prevention/treatment policy

In the case that a crash LSCS is required only the RED checklist is required. See appendix 7.
### Thromboprophylaxis Risk Assessment and Prophylaxis:

<table>
<thead>
<tr>
<th>Risk category</th>
<th>Clinical features</th>
<th>Recommended prophylaxis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>Uncomplicated elective c/s</td>
<td>Graduated compression stockings (GCS) <em>(Flowtrons)</em> before and during surgery and continue until woman is fully mobilising. Early mobilisation and hydration</td>
</tr>
<tr>
<td>Medium</td>
<td>Age &gt;40, Obesity BMI &gt;30, History of smoking, Para 4 or more, Gross varicose veins, Current infection, Pre-eclampsia, Immobility prior to surgery (&gt;4 days), Major systemic illness, e.g. heart/lung disease, inflammatory bowel disease, nephritic syndrome, Nephrotic syndrome, sickle cell disease, Emergency c/s in labour</td>
<td><em>Flowtrons</em> started before surgery and continued until woman is fully ambulating. OR <em>Clexane</em> 40mg 6-12 hours post op and daily until discharge</td>
</tr>
<tr>
<td>High</td>
<td>Women with 3 or more risk factors, Extended surgery, e.g. c/s and hysterectomy, Personal history of DVT, pulmonary embolism or thrombophilia, paralysis of the lower limbs, Women with antiphospholipid antibody (cardiolipin antibody or lupus anticoagulant)</td>
<td><em>Flowtrons</em> started before surgery and continued until woman is fully ambulating AND <em>Clexane</em> 40mg 6-12 hours post op and daily until discharge Consider prolonged anticoagulation in this group</td>
</tr>
</tbody>
</table>

## Elective C/S

On the basis of the risk of neonatal respiratory morbidity following elective Caesarean section, and the risk of labouring prior to Caesarean section, it is recommended by RANZCOG that elective Caesarean section in women without additional risks should be carried out at approximately 39 weeks gestation. Such women suitable for delivery at approximately 39 weeks gestation include breech presentation and uncomplicated repeat caesarean section. Any co-existing problems may indicate earlier delivery.
Women should be informed by the obstetrician of the risks surrounding elective delivery, and informed consent obtained. The c/s will be booked with theatre from antenatal clinic (ANC) and the proposed date and time documented in the day diary in the maternity unit. The TDH leaflet ‘Information for women following a Caesarean section birth’ should be explained and given to the woman by the ANC midwife as well as the ‘Anaesthetics Patient Information: Pre-operation Consent Form’ to read and complete.

Arrangements should be made for the woman to have bloods taken for complete blood count and group and hold within 72 hours of the surgery and also to collect one Ranitidine 150mg tablet from maternity to take one the evening before surgery and two tubes of Chlorhexidine Gluconate 4% Pre-Op foaming antiseptic wash. One tube to be used during shower the evening prior to surgery at home and one in the morning on admission prior to surgery.

There should be no more than 2 elective c/s booked per day. If more may be required then the shift co-ordinator, the Midwife Unit Manager or her deputy should be contacted.
### Procedure (Elective C/S):

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Admit in morning, 0715hrs if first on list, 0815hrs if second on list, 1030hrs if afternoon list. Ensure premedication has been taken as standing order; bloods obtained and sent to laboratory and results printed, all consents signed and available. If bloods not taken, please phone the laboratory and mark as urgent as it can take 1 hour for a group and hold.</td>
</tr>
<tr>
<td>2.</td>
<td>Ask woman to shower with Chlorhexidine Gluconate 4% Pre-Op foaming antiseptic wash (50 ml tube). Advise her to apply and lather progressively over the entire body. Special attention should be paid to skin folds and crevices, hair and hairy areas, nose, navel and proposed operation site. Then rinse well and dry with a clean towel. A clean hospital gown should then be put on.</td>
</tr>
<tr>
<td>3.</td>
<td>As for routine admission: Ask patient to complete the green ‘Patient Registration Form’ and record patient details in the birth register. Obtain baseline observations of vital signs, abdominal palpation, auscultate fetal heart and perform CTG only if clinically indicated and record in her MCIS records. If woman is a smoker, discuss strategies for stopping and offer NRT/support as appropriate and place purple sticker on clinical record page. During normal working hours, the maternity receptionist can admit the woman via IPMS, outside of these hours (Monday to Friday 0800 to 1630hrs) phone and admit via admissions department 8215 (0800 until 2300), dial the operator outside these hours, and obtain medical records.</td>
</tr>
<tr>
<td>4.</td>
<td>Give premeds as per standing order; insert intravenous cannula; clip pubic hair and insert indwelling catheter (IDC) all in the birth suite.</td>
</tr>
<tr>
<td>5.</td>
<td>Measure for flowtron stockings as appropriate (see risk assessment) and take pair to theatre with the woman for attachment during c/s, and the pump.</td>
</tr>
<tr>
<td>6.</td>
<td>The bed that the woman is transported to theatre on MUST have cot sides up and be able to be moved up and down without the need for electricity.</td>
</tr>
<tr>
<td>7.</td>
<td>Support person is to be asked to put on the theatre scrubs and gum boats supplied if they are wearing inappropriate footwear or have no footwear. They will accompany the woman to air lock, where they will be supplied with a red theatre cap. Any student midwife must also wear a red hat to identify they are not a qualified health professional. They will then accompany the woman into theatre unless asked to wait until called. In theatre he/she will be seated by the woman. Due to the importance of maintaining sterility of the area he/she must be informed not to move from the position unless instructed to do so. If GA is performed, the support person will not be able to be present in theatre.</td>
</tr>
</tbody>
</table>

### Emergency C/S:

When the decision to proceed to emergency c/s is made, the care of the woman is handed over to secondary care. The LMC will normally remain in attendance to support the woman and assist the core midwife in preparing the woman for theatre. The core midwife is responsible for ensuring that all preparations are undertaken in a safe and timely manner.
In the case of a Category 1 c/s (see below), the most important preparation is getting the woman to theatre as speedily as possible. Please use the Red checklist only as this minimizes what is required prior to transferring the woman to theatre. All other forms and pre-medications in this case (apart from ural), will be completed theatre or in theatre. In all other circumstances the paperwork and pre-medications should be completed prior to transfer to theatre.

**Decision to delivery interval:**
The decision to delivery interval (DDI) of 30 minutes, decreed as necessary in many legal judgements seems based on custom and practice, rather than on objective evidence in relation to condition of the newborn. Therefore it is recommended by the Royal Australian and New Zealand College of Obstetricians and Gynaecologists (RANZCOG) that there be a four-grade classification system for emergency caesarean section. These are:

- **RANZCOG Category 1** - Urgent threat to the life of a woman or fetus.
- **RANZCOG Category 2** - Maternal or fetal compromise but not immediately life threatening.
- **RANZCOG Category 3** - Needing earlier than planned delivery but without currently evident maternal or fetal compromise.
- **RANZCOG Category 4** - At a time acceptable to both the woman and the caesarean section team, understanding that this can be affected by a number of factors.

RANZCOG further recommends that there should be no specific time attached to the various types of caesarean section categories. Each case should be managed according to the clinical evidence of urgency, with every single case being considered on its merits.

**The obstetrician is responsible for communicating to the anaesthetist, theatre team, paediatrician and midwifery team the category AND time scale proposed for the emergency c/s.** An audit in 2009 found that it is difficult to achieve a category 2 c/s in Gisborne within 30 minutes and may take up to 60 minutes, but this may be possible for a category 1 c/s. Everyone involved must try to ensure a speedy, safe and smooth process of preparation of the woman and transport to theatre.
### Procedure: Preparation and Care of Women undergoing Caesarean Section including trial of instrumental delivery in theatre

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nil By Mouth</td>
<td>Midwife</td>
</tr>
<tr>
<td>Informed consent for surgery obtained</td>
<td>Obstetrician</td>
</tr>
<tr>
<td>Informed consent for anaesthesia obtained</td>
<td>Core midwife to give paperwork, Anaesthetist responsible for gaining consent</td>
</tr>
<tr>
<td>Bloods Taken – Group &amp; Hold, <em>(cross match as requested – O &amp; G must sign request form – if Hb &lt;100 consider xmatch 2 units)</em>, Coagulation Screen, CBC</td>
<td>Core Midwife</td>
</tr>
<tr>
<td>Theatre and Anaesthetist notified – including timing and category of c/s</td>
<td>Obstetrician</td>
</tr>
<tr>
<td>IV access must be present and patent – minimum of 18G (green), well secured. If multiple attempts needed inform anaesthetist who will do on the ward or in theatre.</td>
<td>LMC/Core Midwife</td>
</tr>
<tr>
<td>IV fluids Plasmalyte – run to keep the vein open unless clinically indicated</td>
<td>LMC/Core Midwife</td>
</tr>
<tr>
<td>Pre-medications given as per standing orders</td>
<td>Core Midwife</td>
</tr>
<tr>
<td>Clip pubic hair</td>
<td>LMC/Core Midwife</td>
</tr>
<tr>
<td>Indwelling catheter – Foley with catheter bag with port</td>
<td>LMC/Core Midwife</td>
</tr>
<tr>
<td>ID band</td>
<td>LMC/Core Midwife</td>
</tr>
<tr>
<td>Gown and cap</td>
<td>LMC/Core Midwife</td>
</tr>
<tr>
<td>Patient progress notes updated and present</td>
<td>LMC/Core Midwife/Obstetrician</td>
</tr>
<tr>
<td>Blood results printed where possible and in clinical records, Hb and platelets should be available when woman arrives in theatre</td>
<td>Core Midwife</td>
</tr>
<tr>
<td>20 ID labels available</td>
<td>Core Midwife</td>
</tr>
<tr>
<td>Move woman to electronic postnatal bed</td>
<td>Core Midwife</td>
</tr>
<tr>
<td>Measure for flowtron stockings and take pair and pump to theatre with woman for attachment during c/s</td>
<td>Core Midwife</td>
</tr>
<tr>
<td>The bed that the woman is transported to theatre on MUST have cot sides up and be able to be moved up and down without the need for electricity.</td>
<td>Core Midwife</td>
</tr>
<tr>
<td>Prepare Caesarean cot, verify all equipment is available and in working condition. Neopuff available and correct settings</td>
<td>Core Midwife</td>
</tr>
<tr>
<td>Doppler and gel available</td>
<td>Core Midwife</td>
</tr>
<tr>
<td>Mityvac &amp; Kiwi (Ventouse) suction should be available – 2 sterile packs with mushroom cup</td>
<td>Core Midwife</td>
</tr>
<tr>
<td>Call orderly to assist moving woman to theatre</td>
<td>Core Midwife</td>
</tr>
</tbody>
</table>
The obstetrician may request that the CTG accompanies the woman to theatre to continue to monitor the fetal heart rate.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Responsible Person</th>
</tr>
</thead>
<tbody>
<tr>
<td>Notify NNU of potential impending admission</td>
<td>Core Midwife</td>
</tr>
<tr>
<td>Ensure all patient notes to hand, pre-operative checklist completed</td>
<td>Midwife</td>
</tr>
</tbody>
</table>

The core midwife ensures preparation of specialist equipment for delivery and resuscitation of the baby once in theatre.

The LMC may, if the woman requests, accompany the woman and partner to theatre as a support person thus providing continuity of care and able to support her chosen support person but must wear scrubs and a theatre cap. Once in the airlock, the support person must put on overshoes and wear a red theatre cap prior to transferring through to theatre with the woman and LMC. If an LMC is not available to support the support person, then please notify the theatre staff, as they may be able to provide a support person. However, if there is no LMC present then the core midwife will be responsible for the support person whilst in the airlock, theatre and recovery.

**Communication:**

Please use SBARR form (Situation, Background, Assessment, Recommendation, and Response as the recommended communication tool)

- If it is an emergency caesarean section good communication is vital when handing over responsibility of care to the core midwife.
- Communication to the theatre team re category of c/s is important in order to ensure a timely process of Decision to Delivery Interval (DDI). If it is a category 1 or 2, take the woman to theatre as soon as possible and do not wait for a phone call. If category 3 or 4, theatre will call maternity when they are ready to take the woman.
- Consideration must be given to a paediatrician being present at the birth (see guideline ‘Referrals of neonates to paediatric service’)
- NNU should be informed of potential admission
- Operating times are sometimes subjected to change at short notice e.g. in case of other emergency procedures. Keep woman and family updated as to predicted time of LSCS. Phone theatre for verification of time if uncertain.
- Time-out – in theatre there will be ‘time-out’ checks during the procedure which are to ensure that the operation is safe. All present in theatre must participate with this and not talk whilst it is being undertaken unless they have something to contribute to the questions being asked.

**Request by O & G for ‘Trial of instrumental delivery’ in theatre:**

If the obstetrician chooses a trial of instrumental delivery, this will be performed in theatre with theatre staff and anaesthetist present, but not scrubbed unless the procedure fails when they will immediately proceed to prepare for an emergency c/s.
During the trial the midwife will be responsible for the care of the woman and the ventouse or forceps unless a decision for c/s is made. Theatre staff will provide a sterile trolley for the birth pack and instruments. If possible 2 members of staff or the core midwife and LMC, should be present to facilitate support of the woman, handing the ventouse suction of choice to the obstetrician (pumping up the Mityvac, if used) and receiving the baby.

**Note the increased risk of shoulder dystocia and postpartum haemorrhage (PPH) in a trial of instrumental delivery and be prepared for neonatal resuscitation and PPH.** The woman must be placed on a hovermatt which is kept in delivery suite linen cupboard along with the pack containing birthing equipment as follows:-

**To take to theatre:**

<table>
<thead>
<tr>
<th>Check that there are 2 sterile M-style mushroom vacuum assist delivery cups and a working Mityvac pump in the c/s cot and Kiwi cup and add:</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Delivery pack Episiotomy scissors</td>
</tr>
<tr>
<td>- Delivery instruments Chlorhexidine solution</td>
</tr>
<tr>
<td>- Obstetric cream</td>
</tr>
<tr>
<td>- Forceps if requested by O&amp;G</td>
</tr>
</tbody>
</table>

- CTG machine: the obstetrician may request that the CTG machine be taken to theatre so that the fetus may be monitored during the trial of delivery – an orderly may be contacted to bring this to theatre, this should not delay taking the woman.
- The epidural pump: this should be stopped when the woman is transferred to theatre. The anaesthetist will disconnect the tubing and use the epidural if necessary.

**Process in theatre:**

1. The midwife (or NNU nurse) and LMC **must get changed into appropriate and agreed theatre attire**, which includes a hat and overshoes, prior to entering theatre. The support person may be asked to wait until the anaesthetist is happy for them to enter theatre but would normally accompany the woman through to theatre wearing the required scrubs, red hat and overshoes.
2. The core midwife is responsible for supporting the woman, alongside the anaesthetic technician, during the procedure of inserting the spinal anaesthetic.
3. Assist the woman to lie down and **request that there is a left lateral tilt** on the operating table to prevent aorto-caval pressure/maternal hypotension.
4. The midwife will ensure that the c/s cot and emergency box is available for potential resuscitation of the baby.
5. The midwife will ensure that the baby warmer/resuscitaire is set up ready to receive the baby, with a supply of oxygen and air and suction available and the neopuff PIP and PEEP set at the appropriate rates. The check book must be signed confirming this.
6. The midwife will inform the theatre team of the woman’s blood group. If rhesus negative, the theatre team will normally take cord blood and hand to the midwife to label and process.

7. If umbilical cord blood gas analysis is requested follow guideline (also see appendix 5).

8. The LMC and support person should keep any noise or movement to a minimum during and after the operation. The more people and movement in theatre, the higher the bacteria count in the atmosphere. If an LMC is not available to support the support person then the core midwife is responsible for this.

9. The midwife must take every effort to ensure that the sterile field of the operation is maintained and not touch any person ‘gowned up’ or any of the trolleys set for the operation.

10. The midwife will ensure that the theatre is at an **appropriate temperature to receive a newborn baby** and will communicate to the theatre staff if it is not. The midwife will ensure that the baby warmer is not placed directly underneath the air vent. The midwife will obtain a warm bundle of towels and baby wraps from the warming cupboard in PACU and replace with a new bundle. When doing so, the midwife will confirm with the PACU nurse that the support person can follow the woman into recovery after the caesarean section is completed.

11. The midwife will wear sterile gloves to open the pack on the warmer and ensure that there is a **sterile area on the baby warmer** for the obstetrician to place the baby once it is born. The baby warmer can be taken closer to the theatre table to enable the baby to be safely placed onto the warmer following birth. Once the baby is on the warmer and the obstetrician is away from the immediate area, the warmer can be returned to the outside wall of the theatre, whilst maintaining the safety of the baby.

12. If requested to do so by the obstetrician, the midwife will ‘scrub up’ in the appropriate place and receive the baby directly into a sterile wrap and take to the baby warmer.

13. The midwife should note the time of birth of the baby, turn on the Apgar counter on the resuscitaire and document in the clinical records.

14. The obstetrician is encouraged to delay cord clamping as evidence based best practice but must consider the room temperature and air conditioning which will chill the baby quickly. Once the cord has been clamped and cut then the obstetrician will hand the baby to the midwife/warmer as soon as possible to prevent heat loss. If there is a delay in handing the baby to the midwife it is recommended that the baby be dried and covered in a warm sterile dry towel/sheet, and not left naked and wet which encourages heat loss.

15. Resuscitation of the baby will be as the ‘Resuscitation of the newborn’ guideline. One of the most important measures is to **initially dry and wrap the baby warmly and make an initial assessment of the need for resuscitation**. If the baby’s condition is stable, consideration should be given to placing baby skin-to-skin as soon as possible following the birth unless there are complications which would prevent this or if the woman does not wish this to happen. Unwrap the baby at the theatre table and assist the mother; a warm cover should be placed over the baby to keep heat loss to a minimum.
16. Babies do not require routine suction following a c/s birth, as this can cause reflex bradycardia. If suctioning is felt to be necessary then it must be gentle oral and then nasal suction using a size 10 tube or a bulb syringe. The midwife can perform suction at the warmer; it is recommended that the obstetrician does not delay handing the baby to the midwife if resuscitation is required, as she will be competent to perform initial neonatal resuscitation as clinically indicated.

17. If meconium stained liquor present follow ‘Meconium stained liquor’ guideline.

18. If baby’s condition is not stable, then theatre staff should be requested to summon the on call paediatrician urgently to theatre for assistance if not already present. The baby may be transported to the NNU if there are problems, and the support person would then leave the theatre and accompany the baby with the midwife/paediatrician.

19. If the baby is stable, then the midwife will attempt to put the baby skin to skin with its mother after checking that the anaesthetist is happy with the woman’s condition.

20. If the mother has consented to Vitamin K, this can be given in theatre or given later. Consent should have been obtained prior to coming to theatre and should not be sought during the procedure.

21. The midwife is responsible for stripping the baby warmer and ensuring the oxygen cylinder and suction are turned off. If the oxygen/air supply is low, the midwife is responsible for replacing the cylinder (supply by theatre door).

22. The midwife will ensure that all documentation is complete; medications are charted as per the pain management flow chart; and IV fluids are charted prior to leaving theatre.

ASSOCIATED DOCUMENTS:

- Maternity Unit Guidelines:
  - Information leaflet for women following c/s
  - Meconium stained liquor guideline
  - Referral of neonates to paediatric service
  - Resuscitation of the newborn guideline
  - Umbilical cord gas analysis
- Organisational Policy – Use of Cot Sides/Bedrails
- Appendix 1 - Metoclopramide Standing Order
- Appendix 2 - Ranitidine Standing Order
- Appendix 3 - Plasmalyte Standing Order
- Appendix 4 - Omeprazole Standing Order
- Appendix 5 - Procedure for collection of umbilical cord blood gas analysis
- Appendix 6 - Post operative pain management flow chart 1
- Appendix 7 - Post operative pain management flow chart 2 (IV morphine)
REFERENCES:


Approved By:

________________________________________
HOD Obstetrics

_________________________________________________________________________
Clinical Care Manager WCY

Date of Approval: September 2015

Next Review Date: September 2018
APPENDIX 1:

STANDING ORDERS - MEDICATION

CLINICAL AREA:
Maternity Unit – Hauora Tairawhiti

FOR THE ADMINISTRATION OF:
Metoclopramide

FOR THE USE IN:
Preoperative pre-medication for Elective or emergency Caesarean Sections

RATIONALE:
Medicines can only be administered in accordance with a prescription or a standing order. The use of protocols and standing orders establishes procedures to be followed in the administration of medications which will allow safe efficient and timely treatment of patients.

STANDARD:
Approved Health Professionals will administer medications as per the standing order instructions. Competency is as per number 6.

SCOPE:
All women undergoing a booked or emergency caesarean section.

INDICATION OF WHEN THE DRUG CAN BE ADMINISTERED:
A Registered Midwife or Nurse may dispense and administer preoperatively, pre-medication for Elective or emergency Caesarean Sections.

SPECIFIC CONTRAINDICATIONS / PRECAUTIONS:
- Contraindications - Procaine, procainamide sensitivity, porphyria, epilepsy.
- Avoid rapid infusion which may produce transient but intense feeling of anxiety and restlessness followed by drowsiness.
- Protect from light, must be stored in the box.

DOSE, ROUTE AND FREQUENCY:
- Elective c/s: 10mg orally (PO) 2 hours prior to caesarean section
- Emergency c/s: 10mg Intravenous (IV) undiluted solution administered over 1 to 2 minutes – if a category 1 c/s this can be administered in theatre
DOCUMENTATION REQUIRED:
Hauora Tairawhiti medication chart – to be countersigned by Obstetrician or Anaesthetist within 24 hours of administration.

COMPETENCY:
To be given by a Registered Midwife or Nurse with current competency in IV medications administration, or an Obstetrician.

Date:

Signed:

Angela Freschini       David Freschini       Tomas Goscinski

Yves Bartlett          Deon Stolz              Germanicus Malmberg

Kelly Katchener        Ralph Fuchs
APPENDIX 2:

STANDING ORDERS - MEDICATION

CLINICAL AREA:
Maternity Unit – Hauora Tairawhiti

FOR THE ADMINISTRATION OF:
Ranitidine

FOR THE USE IN:
Preoperative pre-medication for Elective or emergency Caesarean Sections

RATIONALE:
Medicines can only be administered in accordance with a prescription or a standing order. The use of protocols and standing orders establishes procedures to be followed in the administration of medications which will allow safe efficient and timely treatment of patients.

STANDARD:
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All women undergoing a booked or emergency caesarean section.

2. INDICATION OF WHEN THE DRUG CAN BE ADMINISTERED:
A Registered Midwife or Nurse may dispense and administer preoperatively, pre-medication for Elective or emergency Caesarean Sections.

3. SPECIFIC CONTRAINDICATIONS / PRECAUTIONS:
Adverse reactions include blurred vision, rash, dizziness, bradychardia, A-V block, headache, hypersensitivity reactions, changes in LFT’s, drowsiness and malaise.

Reduce dose to 25mg IV if renal function impaired (creatinine clearance less than 50ml/min)

4. DOSE, ROUTE AND FREQUENCY:
a. Elective c/s (morning or afternoon list): 150mg PO the evening before surgery AND 150mg PO 2 hours prior to surgery.
b. Emergency c/s: 50mg intravenously to be given 45 to 60 minutes before induction of anaesthesia, diluted with 20mls compatible IV fluid (0.9% Sodium Chloride), over a minimum of 2 minutes, as soon as possible once decision to c/s is made. If a category 1 c/s this can be administered in theatre. (Currently not available in New Zealand)

5. DOCUMENTATION REQUIRED:
TDH medication chart – to be countersigned by Obstetrician or Anaesthetist within 24 hours of administration.

6. COMPETENCY:
To be given by a Registered Midwife or Nurse with current competency in IV medications administration, or an Obstetrician.

Date:

Signed:

   Angela Freschini    David Freschini    Tomas Goscinski

   Yves Bartlett   Deon Stolz    Germanicus Malmberg

   Kelly Katchener    Ralph Fuchs
APPENDIX 3:

STANDING ORDERS - MEDICATION

CLINICAL AREA:
Maternity Unit – Hauora Tairawhiti

FOR THE ADMINISTRATION OF:
Plasmaryte

FOR THE TREATMENT OF:
Pre-operative fluids prior to emergency or elective caesarean section (c/s)

RATIONALE:
Women undergoing c/s need a patent intravenous (IV) line in situ and will need fluids prior to theatre to keep the vein open.

STANDARD:
Approved Health Professionals will administer medications as per the standing order instructions. Competency is as per number 6.

1. SCOPE:
All women undergoing emergency or elective c/s.

2. INDICATION OF WHEN THE DRUG CAN BE ADMINISTERED:
Routine c/s preparation includes insertion of IV leuor. Plasmalyte may be administered to keep the vein open prior to transfer to theatre.

3. SPECIFIC CONTRAINDICATIONS/PRECAUTIONS:
None

4. DOSE ROUTE AND FREQUENCY:
1 Litre Plasma-Lyte 148 IV at a drip rate to keep the vein open. If there are no complications there is no need for a bolus of fluid prior to transferring to the operating theatre to prevent a Blood Pressure decrease during spinal administration. The anaesthetists will increase the rate once in theatre as required.

5. DOCUMENTATION REQUIRED:
a. Charted on Mediation chart in appropriate IV fluids section
b. Co-signed by anaesthetist within 24 hours
6. **COMPETENCY:**
All midwives or nurses with competency at basic level IV certification.

Date:

Signed:

Angela Freschini      David Freschini Tomas Goscinski

Yves Bartlett       Deon Stolz       Germanicus Malmberg

Kelly Katchener      Ralph Fuchs
APPENDIX 4:

STANDING ORDERS - MEDICATION

CLINICAL AREA:
Maternity Unit – Hauora Tairawhiti

FOR THE ADMINISTRATION OF:
Omeprazole

FOR THE USE IN:
Preoperative pre-medication for Elective or emergency Caesarean Sections

RATIONALE:
Medicines can only be administered in accordance with a prescription or a standing order. The use of protocols and standing orders establishes procedures to be followed in the administration of medications which will allow safe efficient and timely treatment of patients.

STANDARD:
Approved Health Professionals will administer medications as per the standing order instructions. Competency is as per number 6.

1. SCOPE:
All women undergoing a booked or emergency caesarean section.

2. INDICATION OF WHEN THE DRUG CAN BE ADMINISTERED:
A Registered Midwife or Nurse may dispense and administer preoperatively, pre-medication for Elective or emergency Caesarean Sections.

3. SPECIFIC CONTRAINDICATIONS / PRECAUTIONS:
Adverse reactions: Headache, GI upset, elevated LFT's, rash, urticaria, pruritus, malaise, CNS effects including somnolence, dizziness, malaise, insomnia, vertigo, paraesthesia.

4. DOSE, ROUTE AND FREQUENCY:
a. Elective c/s (morning or afternoon list): The woman will have Ranitidine 150mg PO the evening before surgery AND 150mg PO 2 hours prior to surgery. However, if she arrives late on the morning of her elective c/s then she will require the Omeprazole IV as for an emergency LSCS.
b. Emergency c/s: Omeprazole 40mg intravenously to be administered 30minutes before induction of anaesthesia. It can only be diluted with the solvent which is in the pack and is to be administered as a
5. DOCUMENTATION REQUIRED:
Hauora Tairawhiti medication chart – to be countersigned by obstetrician or anaesthetist within 24 hours of administration.

6. COMPETENCY:
To be given by a Registered Midwife or Nurse with current competency in IV medications administration, or an Obstetrician.

Date:

Signed:

Angela Freschini  David Freschini  Tomas Goscinski

Yves Bartlett  Deon Stolz  Germanicus Malmberg

Kelly Katchener  Ralph Fuchs
APPENDIX 5:

PROCEDURE FOR COLLECTION OF UMBILICAL CORD BLOOD GAS ANALYSIS

1. Specific syringe supplied by Maternity and kept in C/S cot

2. Syringe/s given to circulating nurse and opened on sterile tray

3. Blood sample/s taken by Obstetrician, needle is removed and syringe/s capped

4. Syringe/s with sample/s handed back to circulating nurse

   - **Handed to hospital midwife if able to receive**
   - **If midwife unable to receive circulating nurse will put sample/s on ice until it can be processed**

5. Sample/s labelled by midwife – Baby of + DOB, time of birth and time of sample – NO maternal NHI on form completed

6. Orderly rung to take specimen/s to lab/or after hours alternative by midwife when possible

7. Baby’s NHI number is phoned through to lab when available - ASAP

*See full umbilical cord gas analysis policy for further information*
### Appendix 6: Post Operative Pain Management Flow Chart 1

All women to have post operative pain medications and anti-emetics charted in the correct place on the medication chart by the anesthetist prior to leaving PACU.

All women to be prescribed and offered regular (not prn) paracetamol 1g 6 hourly and 75mg voltaren 12 hourly for 48 hours unless contraindicated (liver disease, asthma, etc). An explanation is to be given to the woman regarding reason for this to be given – to prevent pain peaks and troughs.

If PR 1.5mg or IV 1G paracetamol given in theatre, next dose of 1g may be 6 hours later. If PR 100mg voltaren was given in theatre, next dose would be 12 hours later. Make sure both are charted as given on medication chart as appropriate.

Pain score half hourly for 4 hours and then 2 hourly for 24 hours and 4 hourly for a further 24 hours.

If pain score >4/10 at any time consider further pain relief in the following order:

1. **Morphine:** subcutaneous (sc) 5 -10mg 2-4 hourly; or Intravenous (IV) titrated to pain score and observations (see chart 2).
   
   SC & IV are preferred to intramuscular (IM) morphine as this has a sporadic and erratic mode of action.

   PLUS **Oxycodone:** 10mg 12 hourly po, with the first dose given early after the LSCS with Paracetemol & Voltaren as prescribed above if not contraindicated.

2. **Oxynorm** 5mg PRN 6 hourly po can be administered as a rescue analgesic when oxycodone with voltaren & paracetemol are insufficient.

   (*Tramadol : Use if unable to use morphine & oxycontin– note ↑risk nausea, consider 50mg as initial dose and if all OK continue to another 50mg before 6 – 8hrs, then 100mg doses PRN)

Recheck pain score 45 minutes after morphine administration. If remains >4/10 give additional morphine, 50% of previous dose.

*Note Tramadol is contraindicated in women taking SSRI’s e.g. fluoxetine, paroxetine, citalopram.*
APPENDIX 7:

POST OPERATIVE PAIN MANAGEMENT
FLOW CHART 2 (IV MORPHONE)

Pain score >4/10?

Yes

Morphine as per opioid protocol charted on medication chart?

No

Contact anaesthetist to chart

Prepare a syringe: 10mg Morphine diluted to 10ml with sodium chloride 0.9%

Pain >4/10

Yes

Rousable to voice?

No

Discuss with anaesthetist prior to any morphine administration

Wait 5 minutes

Yes

Respiratory rate > 8?

No

BP and HR within normal limits?

No

Less than 10mg IV Morphine in the last hr?

No

Inject 2ml IV

Yes

Yes

Yes

Yes

Yes

Yes

Yes